U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-259 140

Resource Recovery Plant Implementation: Guides for Municipal Officials, Procurement

Mitre Corp, Bedford, Mass

Prepared for

Environmental Protection Agency, Cincinnati, Ohio

1976

BIBLIOGRAPHIC DATA SHEET	1. Report No.	2.	3. Recipient's Accession No. PB-259 140
4. Title and Subtitle Resource Recovery Plant Implementation: Guides for Municipal Officials, Procurement			5. Report Date 1976 6.
7. Author(s) Alan Shilepsky			8. Performing Organization Rept. No. EPA/SW 157.5
9. Performing Organization Name and Address Mitre Corporation Bedford, Massachusetts			10. Project/Task/Work Unit No. 11. Contract/Grant No. EPA-68-01-2647
12. Sponsoring Organization Name and Address			13. Type of Report & Period Covered 14.

15. Supplementary Notes
See also PB-256 460.
(PC A04/MF A01)

16. Abstracts
The purpose of this guide is to provide assistance to state and local government officials in the procurement of resource recovery systems and services. It is important to note at the outset that each procurement must be tailored to fit the particular application and needs of the local sponsor, within legal and equitable bounds. It is recognized that every state and local government must operate with unique traditional and legal procurement procedures and, for this reason, the information in this guide is advisory. Each government must design its own best procurement approach. Primary emphasis in this guide is on defining and explaining a competitive negotiation approach to procurement. This approach offers flexibility and is appropriately used to procure not only equipment and facilities, but also "system designer", whether a consulting engineer or a design and construct contractor. Two topics are treated in some detail: (a) managing the procurement process. i.e., procedures for soliciting and evaluating proposals; and (b) preparing the Request for Proposals (RFP).

17. Key Words and Document Analysis. 17a. Descriptors
*State government,
*Local government,
*Materials recovery,
*Solid waste disposal,
*Procurement,

Urban planning,
Resources,
Management planning,
Methodology,
Bids,

Evaluation,
Projects,
Technology assessment,
Contract management,
Decision making,

Municipalities,
Economic development.

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group 13 B

18. Availability Statement National Technical Information Service Springfield, Virginia 22161	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 73p
	20. Security Class (This Page UNCLASSIFIED	22. Price 4.50/3.00

FORM NTIS-35 (REV. 10-73) ENDORSED BY ANSI AND UNESCO. THIS FORM MAY BE REPRODUCED USCOMM-DC 8265-P74

resource recovery plant implementation

300150

PB 259 140

procurement

guides for municipal officials

planning and overview
technologies risks
and contracts markets
accounting format
financing
further assistance

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

This publication is part of a special series of reports prepared by the U.S. Environmental Protection Agency's Office of Solid Waste Management Programs. These reports are designed to assist municipal officials in the planning and implementation of processing plants to recover resources from mixed municipal solid waste. Alan Shilepsky is responsible for overall project direction.

The title of this series is Resource Recovery Plant Implementation: Guides for Municipal Officials. The parts of the series are as follows:

1. Planning and Overview (SW-157.1)
2. Technologies (SW-157.2)
3. Markets (SW-157.3)
4. Financing (SW-157.4)
5. Procurement (SW-157.5)
6. Accounting Format (SW-157.6)
7. Risks and Contracts (SW-157.7)
8. Further Assistance (SW-157.8)

This environmental protection publication (SW-157.5) in the solid waste management series was prepared for the U.S. Environmental Protection Agency by The Mitre Corporation, Bedford, Massachusetts, under Contract No. 68-01-2647 for which Alan Shilepsky served as EPA's Project Officer. Technical content of this report was approved by the Resource Recovery Division, Office of Solid Waste Management Programs. Mention of commercial products or services does not constitute endorsement of the U.S. Government.

Single copies of this publication are available from Solid Waste Information, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268.

TABLE OF CONTENTS

		Page
SECTION I	PROCUREMENT OF RESOURCE RECOVERY SYSTEMS - AN OVERVIEW	1
	OTHER IMPLEMENTATION ACTIVITIES	2
	DECIDING HOW TO PACKAGE THE PROCUREMENT	4
	Conventional Approach	4
	Turnkey Approach	5
	Full Service Approach	5
	DECIDING HOW TO CONDUCT PROCUREMENT	5
	Formal Advertising	6
	Competitive Negotiation	7
SECTION II	MANAGING THE RESOURCE RECOVERY SYSTEM PROCUREMENT PROCESS	9
	PRELIMINARY ACTIVITIES	9
	BIDDER SOLICITATION	11
	Prequalification Request	11
	Qualification Evaluation	11
	Preparation for Qualification Evaluation	12
	Evaluation of Qualifications	12
	The RFP	16
	Bidders' Briefing	16
	RFP Amendments	17
	Proposal Due Date	17
	PROPOSAL EVALUATION	17
	Preparing for Proposal Evaluation	17
	Evaluation Forms	17
	Evaluation Staff	18
	Evaluation Team Training	18
	Evaluation Calendar	25
	Administrative Details	25
	Proposal Evaluation Phase	25
	Log-in Procedure	25
	Proposal Handling	26
	Preliminary Screening	26
	Detailed Evaluation	27
	Rating Scheme	27
	Site Visits	28
	Evaluation Summary	28

TABLE OF CONTENTS (Continued)

		Page
SECTION II	(CONCLUDED)	
	Review Committee Analyses	30
	In-house Presentation of Results	30
	Notification of Bidders	30
	Public Notice	31
	Competitive Negotiation	31
	Sponsor Preparation	31
	Competitive Negotiation Procedure	32
	Contractor Selection	32
	Contract Negotiation	33
SECTION III	PREPARING THE REQUEST FOR PROPOSALS FOR RESOURCE RECOVERY SYSTEMS	34
	CONTENTS OF THE RFP	34
	INTRODUCTORY MATERIALS	36
	General Program Description	36
	Solicitation Purpose	37
	Project Goals and Objectives	37
	Summary of Specific Project Features	38
	Program History and Sponsor's Legal Authority	38
	Proposal Schedule	39
	System Description and Performance Requirements	39
	Technical Performance Requirements	39
	Management Performance Specifications	45
	Economics and Financing	48
	Environmental and Aesthetic Specifications	50
	Contractual Considerations	51
	Proposal Requirements (Formal Instructions to Bidders)	53
	General Requirements	53
	Detailed Proposal Requirements	54
	Evaluation Process	62
	Methodology/Approach	62
	Evaluation Team	62
	Evaluation Techniques	64
	Evaluation Criteria	64
	Appendices	66

SECTION I: PROCUREMENT OF RESOURCE RECOVERY SYSTEMS - AN OVERVIEW

State and local governments have recently experienced difficulties in acquiring from contractors the equipment, facilities, or services needed to fully implement resource recovery systems. These procurement difficulties have been created by a number of characteristics, unique to resource recovery, which make the procurement process more complex than that of traditional public works projects:

- Technological complexity -- many of the technologies have not yet been proven in operational use.
- Political sensitivity -- the costly and highly visible solid waste management function involves intense political and public participation.
- Financial self-sufficiency -- a resource recovery project should be a business operation which financially stands on its own whether operated by government or industry.
- Variety of contractors -- services may be obtained from consulting engineers, turnkey or full-service contractors, or construction contractors.
- Long-term contracts -- a resource recovery project can involve contracts that can extend up to twenty years for operation, disposal of residuals, and sale of products.
- Multiple system options -- various combinations of technology, markets, ownership and operation, financing and risk sharing are available for consideration.
- Multi-jurisdictional -- for economical operation, many of the resource recovery technologies must be designed and constructed as large capacity facilities, requiring refuse from a number of jurisdictions.
- Extraordinary procurement -- in some cases, procurement of the system may not involve an actual "purchase" at all, but rather selection and award of a "franchise" for a full-service arrangement.

The purpose of this guide is to provide assistance to state and local government officials in the procurement of resource recovery systems and services. It is important to note at the outset that each procurement must be tailored to fit the particular application and needs of the local sponsor, within legal and equitable bounds. It is recognized that every state and local government must operate with unique traditional and legal procurement procedures and, for this reason, the information in this guide is advisory. Each government must design its own best procurement approach.

Primary emphasis in this guide is on defining and explaining a competitive negotiation approach to procurement. This approach offers flexibility and is appropriately used to procure not only equipment and facilities, but also a "system designer", whether a consulting engineer or a design and construct contractor. Two topics are treated in some detail: (a) managing the procurement process, i.e., procedures for soliciting and evaluating proposals; and (b) preparing the Request for Proposals (RFP).

OTHER IMPLEMENTATION ACTIVITIES

System procurement is only one of many activities necessary to implement resource recovery (Figure 1). Preceding procurement are the planning studies needed to provid an in-depth understanding of the area's solid waste problem, and to choose from among the many total systems options available. Experience to date indicates that these planning studies can take a year or more to complete. Details concerning the planning process are presented in Planning and Overview in this series of Implementation Guides.

System procurement can begin after necessary key decisions have been made about the overall project concept. The first step is preparing a Request for Proposals (RFP) or Invitation for Bid (IFB) package. Procurement extends through design, construction, and shakedown, and is completed only after the system is accepted as operational. (Operational activities are not treated in this guide.) The process of developing the RFP or IFB, soliciting and evaluating proposals, and negotiating contracts can take at least one year; detailed design and construction can require an additional two to three years.

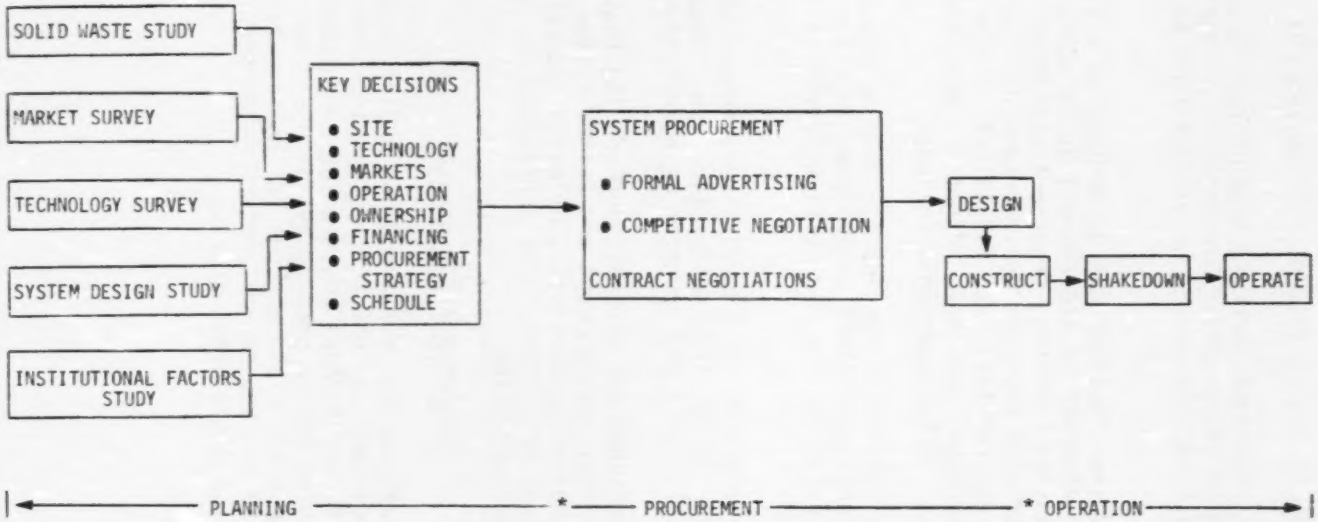

Figure 1. Overview: the resource recovery implementation process begins with planning studies, which lead to key decisions. Procurement extends from the selection of consultants and/or system contractors to implement the chosen system, to the system's design and construction. The process culminates in the shakedown and operation of the constructed facility.

DECIDING HOW TO PACKAGE THE PROCUREMENT

One reason that resource recovery procurement is substantially more complex than most other public procurements is that it is not always apparent which facilities and services should be procured together.

A resource recovery "system" can be defined as a single plant, or a combination of elements of the overall solid waste management system, such as transfer stations, transport activities, and residue disposal sites. For some projects an important decision concerns which of the many required services, facilities, or equipment should be procured as a "package" from one contractor, and which should be purchased separately. Other questions include:

- Should the central processing facility be procured via a conventional formal advertising approach using an Invitation for Bid (IFB) prepared by a design firm?
- Should a turnkey or full-service arrangement be procured for design and construction via a Request for Proposals (RFP) and competitive negotiation?

The advantages of packaged procurements include the possibility of obtaining a lower overall system cost and better system integration. Key disadvantages include procurement complexity and relative loss of control over component selections. The approaches for packaging the procurement are discussed below.

Conventional Approach

The conventional approach for procuring public works projects may involve two procurements: one for engineering services and one for construction. A professional engineering consultant is hired to participate in planning and to prepare system plans and specifications which serve as a competitive bid package for construction. The same consultant might also be retained to perform other services such as construction supervision and plant startup.

Turnkey Approach

An extension of the conventional approach is to assign one party total responsibility for facility design, construction, and startup. This approach involves a single procurement of services, and requires that the contractor provide a guarantee of system performance by demonstrating that the system can meet operational, rather than design, acceptance tests.

Full Service Approach

A further extension of procurement packaging is the inclusion of private operation and possibly private ownership (although private operation can indeed be contracted as a separate service under any approach).* Under a full service arrangement, a systems contractor has full responsibility for financing, design, construction, operation, and possible ownership. In essence, the full service contractor offers the government sponsor a disposal service instead of a facility.

DECIDING HOW TO CONDUCT PROCUREMENT

Laws and procedures governing state and local government procurement of products and services vary widely among jurisdictions and appear to be changing. The variety of procedures used seems to be limited only by the ingenuity and courage of procurement officials and their legal counsel. In general, formal procurement laws and procedures are established to specify the conduct of procurements for small purchases, engineering and other professional services, construction, and equipment items.

The three standard methods normally used in procurement of these products and services are (1) purchase order, for small purchases, (2) formal advertising (including two-step formal advertising), for construction projects and equipment, and (3) negotiated procurement for engineering and other professional services. When more than one

---

* Under some of the financing mechanisms and leasing arrangements being used today for tax and depreciation reasons, actual ownership of the facility is at times a moot point. The key issue is who ultimately bears the various risks associated with the facility and its operations. These risks are discussed in the Risks and Contracts Guide of this series.

professional service firm is being formally considered, negotiated procurement may be termed competitive negotiation. Both formal advertising and competitive negotiation can be used in the procurement of resource recovery systems and services. Because competitive negotiation is a newer concept, this guide focuses on it, but both methods are defined below.

Formal Advertising

This is a standard procurement method used by state and local governments to procure equipment, facilities and the construction of facilities. Strictly speaking, the overall formal advertising method involves competitive procurement of the engineering consultant who would be responsible for system design and probably other tasks as well. An Invitation for Bid (IFB), prepared by the consultant, is used to solicit bids based upon specifications and attachments prepared to permit full and free competition. All bids are opened publicly at the time and place stated. Prompt award is made to the responsible bidder whose bid, conforming to the IFB, will be most advantageous to the government, price and other factors considered.

Formal advertising is an effective method of procurement when the following conditions are present:

- Definitive specifications exist.
- Lowest bid is a major criterion.
- More than one bid is anticipated.

Formal advertising can be used in the procurement of resource recovery systems and services. A simplified description of the procedure is as follows:

1. Qualifications of appropriate architect-engineering (A&E) consultants are examined.
2. An architect-engineering (A&E) consultant is hired.
3. The consultant participates in planning, designs the resource recovery system and prepares detailed drawings and specifications.
4. Invitation for Bid (IFB) package is prepared.
5. Sealed bids are received.

6. Bids are opened in public and reviewed for completeness and responsiveness.

7. Bidders are ranked by both: (a) technical merits and (b) cost.

8. Award is made to the lowest and best bidder.

The formal advertising method is treated in most state and local procurement laws, and virtually all state and local jurisdictions have had considerable experience with it.

Competitive Negotiation

Traditionally, competitive negotiation has been reserved for procurement of professional services, such as engineering or project management, while construction and equipment have been procured by formal advertising. But because of the aforementioned complexity of resource recovery systems and services, state and local governments have shown an interest in utilizing competitive negotiation for all phases of resource recovery projects. One reason for this interest is the consideration now being given to private operation and ownership of resource recovery facilities. When this ownership option is chosen, traditional rules and procedures requiring use of the formal advertising procurement method frequently do not apply and thus can be avoided since the government is not actually "purchasing" the facility.

Competitive negotiation has two important characteristics; it removes lowest bid as the primary criterion for selection, and it allows the sponsor to discuss the proposals with bidders before a selection is made. This two-way exchange of information between bidder and sponsor provides an opportunity to fully consider the important technical, financial, marketing, environmental, and management interrelationships of a proposal.

The complete competitive negotiation procedure is somewhat complex. It involves solicitation and evaluation of bidder qualifications, preparation of a Request for Proposals (RFP) package, evaluation of proposals, and participation in a substantive discussion-negotiation process to select one bidder with whom contract negotiations will take place. It should be noted that the sponsor's RFP should be as specific as possible, with respect to preferred technology, markets, management, financing, etc., to reduce misunderstandings at the outset and to ensure comparability of proposals.

Although time-consuming, the procedure can be very useful in clarifying what otherwise may be an extremely complicated resource recovery procurement. The procedure fosters close understanding between bidder and sponsor before actual contract negotiations begin enabling subsequent contract negotiations to be accomplished more quickly and less expensively (some have taken almost a year to complete).

It should be noted that it is indeed possible to treat the discussion-negotiation efforts (before selection of a single "finalist") and contract negotiations as a single process. What this means is that a single bidder might be chosen for contract negotiations immediately after proposal evaluation, or that contract negotiations, in effect, could be conducted competitively with two or more bidders. The advantages of these variations must be considered in light of the particular situation and the capabilities of the sponsor.

SECTION II: MANAGING THE RESOURCE RECOVERY SYSTEM PROCUREMENT PROCESS

The management of resource recovery procurement involves a series of activities beginning when the key system decisions have been made and extending to the time when the system is fully operational. The purpose of this section is to outline those activities.

The formal advertising procurement method has been well documented, so this section describes the steps involved in the competitive negotiation method. This method can be used to procure a turnkey or full service contractor, or, in a shortened version, the design services of a consulting engineer. The actions required by the sponsor in competitive negotiation procurement, as described below, include the preliminary activities to prepare for solicitation of proposals, proposal evaluations, contractor selection, and contract award (Figure 2).

In the case that the sponsor is using competitive negotiation to procure a turnkey or full service contractor, it is imperative that it have adequate technical, legal, financial, and managerial assistance in the process. Usually, this entails engaging the services of knowledgeable consultants, such as consulting engineers, management consultants, and financial advisors.

PRELIMINARY ACTIVITIES

First, the sponsor must plan the specific steps of the procurement process it intends to use. One major decision is whether or not to conduct a prequalification stage, that is, an examination of bidder credentials and selection of qualified bidders prior to issuance of the RFP. This process, if permitted by state and local law, will save unqualified bidders considerable money and effort in preparation of proposals and will save the sponsor time and effort in proposal evaluations.

The sponsor must also prepare a set of evaluation criteria which will be used to evaluate proposals. The criteria should reflect the sponsor's goals in the system implementation; they should outline key issues for consideration and emphasize the issues of most importance to the sponsor. More discussion of evaluation criteria is provided in Section III.

To select a contractor using the competitive negotiation approach, the sponsor will solicit proposals by preparing and issuing a Request for Proposals (RFP) "package". The RFP should be based upon the preestablished evaluation criteria and sponsor goals for the resource

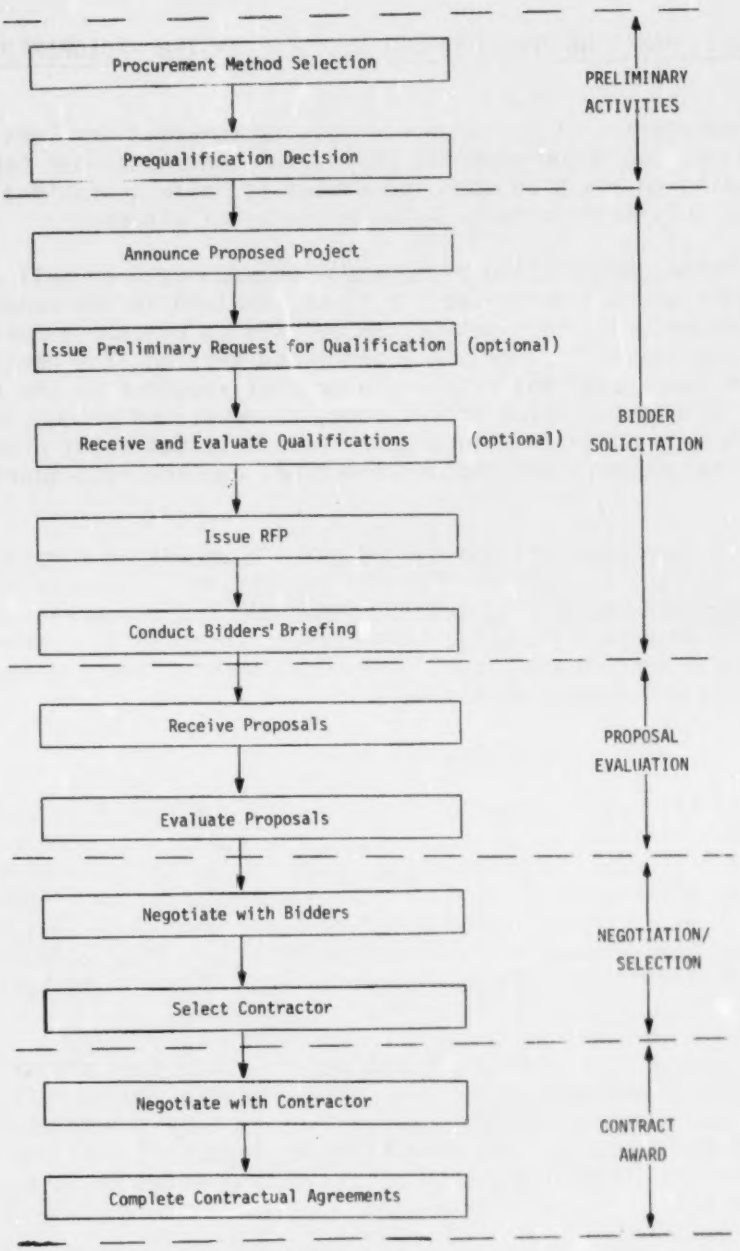

Figure 2. Procurement Steps: A sponsor's procurement activities are based upon previous planning (Figure 1) and range from the development of a procurement strategy to the signing of contracts. Contractor responsibilities may include design, construction, and/or operation.

recovery system. Section III describes the process of preparing the RFP and its contents. The rest of this section describes the other steps involved in the competitive negotiation process.

BIDDER SOLICITATION

The bidder solicitation can be accomplished by using one of two approaches. In one approach bidders are prequalified in order to receive the RFP; in the other the RFP is released to all requesters. (In some cases, such as the selection of a consulting engineer, the final selection may be made immediately after the qualification stage.)

Prequalification Request

If prequalification is going to be used, the first solicitation of bidders should occur at least one month prior to the issuance of the RFP. Depending upon public bidding requirements, legal notices may be published, press releases issued, and letters sent directly to possible bidders to provide a brief system description (system size, extent of resource recovery, ownership requirements, types of refuse, etc.) and request letters of interest from bidders. Then a Request for Qualifications (RFQ) is issued to the bidders, containing more details of system performance, management and financing requirements, and procurement schedule. It should also request the types of qualification information listed below from each potential bidder.

- Resource recovery products, services, new business ventures
- Existing production facilities and equipment
- Management and financial performance
- Personnel description
- Resource recovery-related experience
- Corporate brochures

Qualification Evaluation

Evaluation of the qualifications of potential bidders is not an inherently detailed process. The purpose is to encourage a number of capable firms so as to ensure a proposal response representative of the industry, and secondly to eliminate firms that are obviously incapable of fulfilling the requirements.

Preparation for Qualification Evaluation

A form should be prepared containing questions which will enable the evaluator to assess the data supplied in the qualification statements. An example of a useful format is contained in Table 1. It should be noted that the four major areas, i.e., technology, management, marketing and finance are emphasized and can be evaluated independently if so desired.

The Creation of a Rating Scheme

Since the evaluation of qualifications serves only to screen the unqualified bidders from those qualified, it should be kept as simple and straightforward as possible. A detailed rating scheme is not required; however, a numeric scheme may be utilized to assure that all of the factors have been considered. A numerical measure will enable evaluators to assign relative weights to the more important attributes, as well as allow for ease in presentation of results.

Creation of an Evaluation Team

The size of the evaluation team will be influenced by the expected number of replies. However, the group should be representative of the interested principals and should possess skills in the four important areas: financing, technology, management and marketing. A training meeting should be held prior to the evaluation effort to ensure a uniform interpretation of evaluation criteria.

Other details which must not be overlooked are the physical location of the team during their evaluation effort, the log-in and tracking procedure of the replies to the RFQ and an assignment plan for handling the workload.

Evaluation of Qualifications

The actual evaluation begins with the receipt of the qualifications statements and includes the steps listed below.

Log-in

All the responses should be recorded and maintained in an accessible file for future reference.

Table 1

Checklist for Evaluation of Responses to Requests for Qualification

CRITERIA	ACCEPTABLE	SOME PROBLEMS	UNACCEPTABLE	COMMENTS
Process Technology				
a. Does the applicant propose a proven process that is within the "state of the art"?				
b. Based on the number of locations indicated in the response, has the proposed process had sufficient operating experience?				
c. Does the proposed process have adequate processing capacity in tons per day either singularly or modularly?				
d. Has the contractor demonstrated other experience in the field of resource recovery or municipal solid waste disposal?				
OVERALL: Is the proposed process a viable process? (Consider answers to a-d)				
Management				
a. Does the type of organization proposed give sufficient prominence to resource recovery?				
b. Has the firm a history of corporate success? (See when established, profits)				
c. Has the firm a background in resource recovery? (See length of time in resource recovery, market history, and backlog)				
d. Has the firm indicated future emphasis in solid waste? (See research)				
e. Does the corporate structure indicate a high enough level of control and responsibility?				
f. Does the overall staff have skill and experience to successfully man and run a plant of the size proposed?				
OVERALL: Does the level of control, the corporate structure, and the highest level of responsibility suggest a firm commitment on the part of the management of the firm? (Consider answers to a-f)				
Marketing				
a. Is the corporate marketing arrangement adequate for marketing resource recovery products?				
b. Does the firm have background in dealing with recovered products?				
c. Has the firm researched potential markets for the marketing of resource recovery products?				
d. Does the proposed marketing staff have adequate experience and responsibility?				
OVERALL: Does the marketing data submitted indicate sufficient interest and planning by the firm in the marketing area? (Consider answers a-d)				
Financial				
a. Can the firm successfully weather daily operating contingencies? (See cash and working capital)				
b. What are the possibilities for raising additional funds if needed? (See credit rating, debt tc equity ratio)				
c. Does the firm give indication of being capable of surviving future long term contingencies? (See net worth, profits, long term debt)				
d. Is the firm capable of taking on additional projects? (See current backlog)				
OVERALL: Does the overall financial picture indicate sufficient financial backing for this project?				

Initial Scan

The purpose of the initial scan is to provide overall familiarity with the candidates and to divide them into two groups. The first group consists of all contractors whose capabilities are not subject to question. The remaining candidates comprise the second group.

Detailed Study

The candidates in the second group should be given a more careful analysis than those in the first. The financial specialists should examine each qualifications statement, paying particular attention to the net worth, debt to equity ratio and the value of other resource recovery work commitments. The remaining members of the team should review the technical, marketing and management areas. However, it is desirable that each person review every qualifications statement. A team of three to four members should be capable of reviewing 30 to 40 replies in two to three days.

Final Summary

In this step the results of the previous reviews are arranged into three groups. The first consists of those respondents who qualify without question. The second group includes those firms that are acceptable, with noted deficiencies. For example, a firm or consortium may have an unclear corporate or management structure or a high debt to equity ratio which may indicate the need for additional financial backing. The final or third group includes those firms who appear unacceptable and consequently should be discouraged from submitting a proposal.

For summary purposes a rudimentary point system can be employed based on the format demonstrated in Table 1. The technical rating of one point may be given to firms possessing a low level of technical expertise and little operational experience. A two point rating may be assigned to firms which demonstrate technical expertise but have not yet been committed to a full scale facility. The highest rating, three points, may be awarded for demonstrated technical expertise and a commitment to a full scale facility. Similar ratings can be used for the other three areas. These ratings can be summarized in a format such as the one shown in Table 2.

Since this is an evaluation of the companies' qualifications to implement a complicated and capital intensive facility, the final decision should be weighed more heavily toward the technical and financial areas, with consideration given to the comments in the remarks column. Typical remarks might include: high debt to equity ratio,

Table 2

Summary Qualification Evaluation
(Sample Form)

Company Name	Process Type	Technical Rating	Management Rating	Marketing Rating	Financial Rating	Total Points	Remarks
Group I							
Company A	Shredded Fuel	3	3	2	3	11	Qualified
Company B	Incineration	3	2	3	3	11	Qualified
Group II							
Company C	Pyrolysis	2	3	2	1	8	Additional Financial Backing Required
Company D	Incineration	3	1	3	2	9	Management Unclear
Group III							
.							
.							
.							

a local firm, lack of data, etc. The comments for possibly rejected qualifications will require some understanding and detail to support that judgment.

Notification of Respondents

All firms responding to the RFQ must be notified of the results of the evaluation. The firms rated highest can be notified by mail. Included with the letter of acceptance should be a copy of the RFP and a list of qualified bidders. Those firms which possess some deficiency can simultaneously be mailed the same RFP package, with the sponsor's recommendation of the corrective action to be included in their proposals. Finally, the firms which are to be discouraged or prevented from bidding should be informed of the reasons for their poor rating. Such reasons may include insufficient resource recovery experience, insufficient financial backing, limited management, marketing, or technical capabilities. In the event that the evaluation team does not want to preclude anyone from bidding, it may allow an insistent bidder to submit a proposal anyway.

The RFP

The RFP package should include a notice of the total number and names of bidders to whom it was issued, a review of the procurement schedule and the name and phone number of the sponsor. Section III provides a detailed outline of the RFP contents. The information and bidder requirements which are presented in the RFP should be as specific and detailed as possible.

Bidders' Briefing

A meeting with all bidders should be held to review the RFP, clarify any misunderstandings of the RFP contents, and survey bidder sentiment concerning the RFP or procurement schedule. The meeting should be scheduled two weeks to a month following the issuance of the RFP to allow bidders time to become familiar with the RFP contents before the briefing and to allow sufficient time between the briefing and the proposal due date to permit bidders to incorporate any changes or clarifications into the proposals.

A briefing of the RFP contents or a discussion of major issues may be presented. The most important item during the bidders' briefing, however, will be the response to the bidders' questions. Questions may be asked orally or may be submitted to the sponsor in writing prior to the meeting. (The desired approach should be specified in the RFP.) It is important that an accurate written record of the

conference, preferably a stenographic transcript, be provided to the bidders following the conference to ensure fairness and equity to all bidders. This record, in addition to response to written questions and any changes in the procurement schedule, should be sent to the bidders as soon as possible.

RFP Amendments

If as a result of the bidders' briefing or generation of new information, any changes in the RFP are desired by the sponsor, they should be made and bidders officially notified as quickly as possible. It is important that each bidder receive the amendments. Follow-up calls or letters from the sponsor to the proposal manager for each firm may be necessary to ensure that information has not been lost and that no bidders have been overlooked.

Proposal Due Date

The bidders should be given 90 days or longer after the issuance of the RFP to prepare proposals. If extensive changes are made in the RFP at the time of the bidders' briefing, the deadline may have to be extended to allow bidders time to prepare responsive proposals. The sponsor should be receptive to bidder sentiment about the reasonableness of the time schedule.

PROPOSAL EVALUATION

The evaluation of proposals is a considerably more detailed and time consuming procedure than the evaluation of qualifications. The purpose is to select the most qualified firm and process not solely on the basis of low cost, but based upon a number of major criteria including technical system design and operation, marketing considerations, system management, financial considerations, environmental impact and aesthetics, and pricing and economics. Careful preparation and evaluation are therefore necessary, as described below.

Preparing for Proposal Evaluation

The preparation for proposal evaluation should begin well before the receipt of proposals. Preparation steps include the following items.

Evaluation Forms

It is extremely important to develop comprehensive evaluation forms based upon the detailed evaluation criteria defined during the

RFP preparation. Examples of evaluation forms are shown in Tables 3 through 8. The forms should be designed to force the evaluators to consider every important detail in the proposal and to accurately summarize the proposal's merits and weaknesses.

Evaluation Staff

The evaluation committee should consist of specialists in engineering, finance and economics, marketing and environmental control, as well as people familiar with the political and operational environment in which the facility will be implemented. The sponsor's technical advisors should be involved and legal counsel should be available. Every effort should be made to include representatives of the various government agencies who are involved with the project, such as members from the Departments of Public Works or Sanitation, Environmental Affairs, Public Health, Administration and Finance and other involved state, county, regional or local agencies. The specific number of evaluators depends upon the number and detail of proposals expected and the number of specialists who can devote the time required by the evaluation effort. The evaluation must be a full time assignment for the key evaluators.

It is recommended that the evaluation staff be subdivided into teams to focus upon each of the major evaluation criteria. To correspond with the evaluation criteria outlined in Table 13, three teams could be formed to focus upon Financing and Economics; Environmental Impact; and Marketing, Management and Technical Design. Evaluators and government representatives should be assigned according to their expertise. For example, representatives from a Comptroller's Department should be on a financial team, representatives from a Department of Public Health on a technical or environmental team as appropriate.

Evaluation Team Training

Approximately one week prior to the beginning of the evaluation effort a team training and orientation meeting should be held. The calendar or scheduling of the evaluation effort should be explained at this meeting. Among the more important aspects to be discussed are the standards for acceptable responses in each of the areas being investigated. It is essential that each evaluator understand the standards so proposals are treated equally. All evaluators must be kept aware of revisions in standards so that all proposals will be evaluated by the same standards.

Table 3

Technical System Design & Operation Evaluation (Sample Form)

I. Develop a brief discussion of the system design and operating philosophy with special attention paid to the following major subjects:

- Design Technology
- Energy Balance
- Reliability
- Alternative Site
- Emergency Procedures
- Start-up Procedures

II. Develop an evaluation of the system design and operation based on the specific items shown in the sample table below.

CRITERIA	RATING	CRITERIA	RATING	CRITERIA	RATING
Design		Reliability		Alternative Site	
Process "State of Art"		Operating Time (days/year)		Local Assignment	
Capability (TPD)		Scheduled Downtime		Access	
Completeness		Unscheduled Downtime		Size	
Efficiency of Equipment		Maintenance Schedule			
Storage Capacity		Downtime Related to Storage Capacity			
Technology Back-up		Necessary Redundancy			
Peripheral Equipment					
Volume Reduction		Emergency Procedures			
Traffic Handling		Safety Precautions			
		Overflow of Storage Capacity			
Energy Balance		Discussion and Suggested Solution of Major Equipment Difficulties			
Ratio of Energy Used/Energy Produced		Discussion and Suggested Solution of Other Problem Areas			
Output Materials					
Residue Quality					
A = acceptable, S = some problems U = unacceptable					

III. Prepare a summary discussion of major technical weaknesses.

IV. Prepare a summary discussion of major technical strengths.

V. List all sources of information in addition to the proposal (e.g., phone calls, visits, etc.).

Table 4

Marketing Evaluation
(Sample Form)

I. Develop a brief discussion of the marketing, strategy, highlighting the following:

- Description of Markets
- Market Experience
- Product Commitments

II. Develop an evaluation of the marketing based on the specific items shown in the sample table below.

CRITERIA	RATING	CRITERIA	RATING	CRITERIA	RATING
Market Description Quantities (total est.) Location of Markets Long Term Plans		Marketing Experience Evidence of successful efforts Staff qualifications Organization Qualification		Product Commitments Evidence of Commitments Quantity Length of Time Price Range	
A = acceptable, S = some problems, U = unacceptable					

III. Prepare summary discussion of major marketing weaknesses.

IV. Prepare summary discussion of major marketing strengths.

V. List all sources of information in addition to the proposal (e.g., phone calls, visits, etc.).

Table 5

Financial Evaluation
(Sample Form)

I. Develop a brief discussion of the proposed financing including:

- Share of investment
- Method of private equity financing
- Method of providing non-private equity financing
- Anticipated interest rates
- Corporate financial capabilities

II. Develop an evaluation of the financing based on the specific items shown in the sample table below.

CRITERIA	RATING
Contractor share of investment Methods of providing private equity financing Methods of providing non-private equity financing Anticipated interest rate Corporate capabilities Net worth vs. resource recovery backlog Ability to raise capital Ability to meet normal financial contingencies	
A = acceptable, S = some problems, U = unacceptable	

III. Prepare a summary discussion of the major financial weaknesses.

IV. Prepare a summary discussion of the major financial strengths.

V. List all sources of information in addition to the proposal (e.g., phone calls, visits, etc.).

Table 6

Pricing/Economics Evaluation
(Sample Form)

I. Develop an evaluation of the general pricing and economic factors based on the specific items shown in the sample table following:

CRITERIA	RATING
Cost Data Completeness Accuracy Support Data Assumptions Escalation clause	
A = acceptable, S = some problems, U = unacceptable	

II. Compare the various alternatives based on the items shown in the sample table below.

CRITERIA	x tons/day	y tons/day	z tons/day
Investment Cost			
Total $/ton thruput			
Annual cost/ton thruput			
O&M Cost			
$/ton			
% labor cost			
Total annual cost/ton			
Ratio of investment/O&M cost			
Estimated product revenue/ton			
% product commitment			
Annual net cost/ton			
Disposal fee/ton*			
Return on contractor's investment (20 yrs)			
Profit sharing*			
Escalation*			
* These items may be subject to negotiation in which case the figures here are just a starting point for negotiation and should not be considered when comparing alternative proposals.			

III. Prepare a summary discussion of the major pricing/economic weaknesses.

IV. Prepare a summary discussion of the major pricing/economic strengths.

V. List all sources of information in addition to the proposal (e.g., phone calls, visits, etc.).

Table 7

Management Evaluation
(Sample Form)

I. Develop a brief discussion of the management philosophy emphasizing:

- Management concepts
- Design and engineering personnel
- Operating personnel
- Master plan
- Policies
- Schedules

II. Develop an evaluation of the management based on the specific items shown in the sample table below.

CRITERIA	RATING	CRITERIA	RATING	CRITERIA	RATING
Management Concepts Corporate Structure Level of Control Participants Role Definition Contractual Services Design & Engineering Personnel Identification of Key Personnel Qualifications Experience Responsibilities		Operating Personnel Identification of Key Personnel Qualifications Experience Responsibilities Subcontractor Identification Description of Master Plan Completeness Clarity Reasonableness Schedules		Policies Maintenance Philosophy Visitor Accommodations etc. Safety Policies Entire Project Milestone Identification Shakedown & Start-up Budget Controls Progress Controls	
A = acceptable, S = some problems, U = unacceptable					

III. Prepare a summary discussion of the major management weaknesses.

IV. Prepare a summary discussion of the major management strengths.

V. List all sources of information in addition to the proposal (e.g., phone calls, visits, etc.).

Table 8
Environmental Impact & Aesthetics Evaluation
(Sample Form)

I. Develop a brief discussion of the proposed environmental impact, with particular attention to the following areas:

- Architecture design and aesthetics
- Construction
- Operation

II. Develop an evaluation of the environmental impact & aesthetics on the basis of the specific items shown in the sample table below.

CRITERIA	RATING	CRITERIA	RATING
Architecture, Site Design & Aesthetics • Professional capabilities • Architectural rendering • Aesthetics • Alternative Plans • Methods • Estimated utility requirements • Energy Conservation • Traffic • Atmospheric emission CO SO_2 NO_x • Control during construction Air Noise Water effluents • Solid waste disposal • Additional data		Process Design & Plant Operation • Estimated utility requirements • Reduction of energy consumption • Atmospheric emission CO SO_2 NO_x • Special atmospheric emissions control • Alternative emission controls • Noise level investigation • Noise level controls • Alternative Noise level control • Treatment of water effluents • Water effluents control • Alternative water effluents control • Product evaluation • Impact of noise, dust on employees • Provisions for employee protection • Additional supporting data	
A = acceptable, S = some problems, U = unacceptable			

III. Prepare a summary discussion of the major environmental and aesthetic weaknesses.

IV. Prepare a summary discussion of the major environmental and aesthetic strengths.

V. List all sources of information in addition to the proposal (e.g., phone calls, visits, etc.).

Evaluation Calendar

The calendar should be established to allow sufficient time to perform a detailed analysis of each proposal, to ask and receive answers to questions which may arise and finally, to visit the respondents' facilities and existing sites of similar facilities to verify data as the necessity arises. A sample calendar is presented below:

SAMPLE CALENDAR

Steps	Allotted Time (days)	Working Days From Receipt of Proposals
1. Log-in	0-1	1
2. Preliminary Screening	3-5	4-6
3. Detailed Evaluation	15-30	19-36
4. Visits	5	24-41
5. Evaluation Summary	3-5	27-46
6. Analysis by Review Committee	2-3	29-49
7. Selection of Finalists	1-2	30-51

Administrative Details

Since proposal evaluation may take as long as two months, it is important that arrangements be completed in advance for such administrative details as: office space, stationery, secretarial help, telephones, and a workable filing and distribution system for the proposals. An equally important measure is the assignment of teams and team workload, according to the total number of proposals received.

Proposal Evaluation Phase

A great amount of detailed information is required for assuring procurement of the best resource recovery plant possible. Because of the large financial commitment required for the facility and also the cost to the contractor of preparing the proposal, the sponsor is obligated to conduct a conscientious and thorough evaluation. The actual evaluation begins with the receipt of the proposals and includes the items addressed below.

Log-in Procedure

A filing procedure should be established to record the replies and the date they are received. (In a competitive negotiation procurement, no purpose is served by a public opening of proposals and price comparison. The proposals will be evaluated for more than just

price; furthermore, the prices stated in the proposals may be subject to change in the evaluation and negotiation processes that follow.)

Proposal Handling

Proposals must be handled in such a way that bidders are treated equitably and all proposals are accounted for at all times. This requires that they are safeguarded and that one individual has the prime responsibility for their whereabouts once they are officially received. In cases where proprietary information is proposed, extra precautions must be taken to assure that information will not be compromised. When not in use, proposals should be stored in a secure location, preferably in a locked container.

As a matter of policy, the sponsor may indicate in the RFP that any proposals or parts of proposals received after the deadline are deemed unresponsive and will be disqualified from evaluation, or the sponsor may make provisions that under special circumstances late proposals will be taken under advisement on an individual basis for just cause such as inclement weather, extraordinary market commitments, or last minute changes in the RFP initiated by the sponsor. Each sponsor must decide for itself the policy it wishes to use and must strictly adhere to it.

The sponsor should establish a policy regarding missing information. Proposals with missing information may be viewed as being unresponsive or the bidder may be allowed to supply the additional information by a prescribed deadline.

With the proposals, the sponsor may receive bid deposits. These are to be considered as part of the proposals and, as such, are subject to the same provisions regarding safeguards and lateness. The deposits, which are normally in the form of a certified cashiers' check or draft, should be fully accounted for at all times by the sponsor.

Preliminary Screening

The initial effort by the evaluators should be an overall reading of each proposal. The purpose of this review is to ensure that the proposals are complete and responsive to the RFP. It also permits the staff to develop a familiarity with the replies. Any proposal judged as non-responsive at this stage should be referred to the key members of the evaluation team for a final decision. This stage will require 3-5 days.

Detailed Evaluation

Evaluation teams should then meet to begin detailed proposal review and evaluation. Because proposals should be submitted in separate or easily separable volumes, the volumes can be distributed to appropriate teams; however, each member should review all parts of all proposals. The detailed review should consume three to six weeks, depending upon the number and complexity of proposals. Included in this interval is ample time to hear bidder presentations or make inquiries of bidders as needed.

During this time the teams will complete the evaluation forms (e.g., Tables 3 through 8).

Rating Scheme

A rating scheme can be an important aid in the evaluation process. It is not, however, proposed to be a single measure for acceptance or rejection, but rather serves three other important purposes: to discipline evaluators to examine each criterion; to provide a mechanism for quantifying differences among proposals; and to provide a communication medium for evaluators. Like the evaluation forms, a rating scheme should be developed prior to receipt of proposals.

To be effective, the scheme should incorporate, as a minimum, the following characteristics:

- Simplicity; that is, it should be easy to apply, explain and understand
- Completeness; it should be applied to all important items
- Fairness and objectivity; it should result in ratings that will reflect the true requirements associated with the procurement

One suggested numerical rating scheme is the following:

- For every proposal, evaluation team members assign points (e.g., on a range from 0 to 10) for each subjective criterion, that is for each criterion which does not already have a numeric value.

- Each team then discusses and agrees upon one point assignment for each item in each proposal. Points can be summed for the major evaluation categories.

- If desired, weights can be assigned to the various evaluation criteria, according to the priorities of the project. (Table 9)

- Points are assembled from all of the teams onto a master chart (Table 9). Point ratings are multiplied by weighting factors to obtain a new weighted score for each category. These scores are then summed to give a "bottom line" evaluation score to each proposal.

Total point scores should be used with care. Critical factors and differences must be considered even if they do not lend themselves to quantification and numeric ranking. Also, additive rankings may be misleading, in that a bidder's failure in a single area can totally undermine a proposal's chance of success. It is important to realize, therefore, that a numerical system should be used as an aid, not as a replacement for the complex evaluation decisions which must be made. If the bottom line scores must be released publicly, they must be accompanied by prices and statements about proposal strengths and weaknesses.

Site Visits

The evaluators may visit some of the contractors to acquire additional data and to meet some of the personnel assigned to the project. Visits to sites may also be made for the purpose of reviewing and verifying the technical characteristics of the project. Approximately one week should be allowed for all visits.

Evaluation Summary

A large matrix can be used to display the results of the appraisals in each area along with the rating as shown above, and pertinent comments pertaining to each proposal (Table 9). Comments provided for technical system design, for example, might relate to specific questions of process reliability or feasibility. This matrix could be used as a means for presenting the reasons for selection of certain finalists for negotiation.

Table 9. Sample Form for Evaluation of Proposals

CRITERIA	Weighting Factor	Range of Points Possible	Proposal A			Proposal B		
			Point Assignment	Weighted Score	Comments	Point Assignment	Weighted Score	Comments
Technical System Design and Operation Design Energy Balance Reliability Site Safety								
Marketing Consideration Market Description Experience Products								
System Management Management Concepts Design & Engineering Personnel Operating Personnel Master Plan Schedule								
Financial Considerations Share Methods of Equity Financing Methods of Private Financing Anticipated Interest Rate General Financial Capabilities Methods for Non-Private Investment								
Economic Considerations Capital Cost Operating & Maintenance Revenues for Recovered Products User Fee								
Environmental and Aesthetic Considerations Air Water Land Noise Aesthetics								
TOTAL ASSIGNED POINTS				X			X	

If the evaluators feel that sufficient information has been presented to justify selection of finalists for negotiation, the matrix should be presented to the review committee for approval. The evaluators should be very careful when completing the forms to include sufficient reasons for all decisions for use in subsequent debriefings and indication of questions which may be left open until the further negotiations.

Review Committee Analyses

After the teams have completed their evaluations, the results should be analyzed by a committee composed of the project leader and a representative of the various departments concerned with the project, i.e., the Departments of Public Health and Public Works. Their function should be to look for things that might have been overlooked by the staff. However, in most cases, the members of the review committee will have been involved in the evaluation, and so this review will serve as a final check before any announcement is made; two to three days should suffice.

In-house Presentation of Results

This step in the evaluation process ensures that all personnel associated with the evaluation are conversant with the results. It is also a final opportunity for objections to be raised. This presentation should be approximately two days in duration.

Notification of Bidders

At this point the sponsor must notify all bidders of the selection of finalists for negotiation. Finalists should be informed of the schedule and procedures for further discussions. Those bidders who are disqualified from further consideration should be told specifically why they were disqualified. Of course, to justify disqualification, the sponsor must indicate those objective evaluation criteria in which a disqualified bidder scored low. The sponsor should also allow time for discussing proposals with disqualified bidders.

The sponsor has an obligation to notify bidders of the disposition of their proposals prior to public announcements. This need not be fully adhered to in those areas where evaluation procedures are subject to public review. It is important, though, for the sponsor to form a policy regarding the extent to which proposal evaluation and proposal contents will become public knowledge.

Public Notice

To acquire and maintain public support of the resource recovery project, reports or press releases should be issued to the public at this point and throughout the selection process to keep them informed of major milestones.

Competitive Negotiation

The competitive negotiation step consists of two-way discussions with bidders to question, explore, and bargain in vital areas of proposals, in order to gather sufficient information to be able to select one final contractor.

There is no formal procedure for competitive negotiation. It occurs as an extension of proposal evaluations and leads into final contract negotiations, but there is no prescribed time period or order of events. Negotiations may be carried on with all finalists equally, or if one finalist appears most qualified, negotiations can be conducted solely with him until such time as he is selected or the sponsor decides that it is necessary to negotiate with the other finalists. Other parties such as potential markets may be brought in for discussions. The sponsor has to determine the negotiation approach and schedule to be used according to the project needs and complexities, and the qualifications of the bidders. The basic steps of the negotiation process are discussed below.

Sponsor Preparation

Beforehand, the sponsor should determine the tasks it wishes to accomplish in the negotiation. In most cases, the major objective will be to examine specific details, such as market commitments, financing, changes in original assumptions or design modifications which need to be addressed further. To do this, the sponsor must prepare the specific questions it wishes to ask of bidders in order to gather sufficient information to select a final contractor.

The sponsor should also establish the negotiation objectives which will lead to the best arrangement for the sponsor (or other public contracting party, in the event that the sponsor is obtaining the system for a community or region). It may, for example, wish to introduce contractual considerations even before the final selection in order to determine the attitudes of the competitors towards the arrangement desired by the sponsor. However, the sponsor must also remain flexible to clarification or changes which may be necessary

to fit the system chosen, or which offer greater benefit to the sponsor. The sponsor must also choose representatives for the negotiations. In general, the negotiating team must have expertise in financial, technical, and management issues and timely assistance from personnel in relevant government agencies. The sponsor may also desire to include outside professional (e.g., legal or technical) advisors. The representatives must be familiar with the aspects of future contractual agreements desired by the sponsor, and with specific tactics and questions which need to be discussed with bidders.

Competitive Negotiation Procedure

Negotiation sessions can be informal; in fact, specific issues can be discussed by individual mail correspondence, phone conversations, site visits or meetings. Sessions should be held privately with each firm, but may be held concurrently with several firms. Information or proposal changes which are generated during the sessions are generally not shared with other bidders.

The discussions are conducted to establish that the sponsor and contractor(s) fully understand what their responsibilities will be and to make the proposals more firm in any way possible. Areas usually in need of improvement are the development of markets for materials and energy, establishment of security for financing the project and sharing of risks. Other areas might be costs and profit, performance requirements, and methods of payment.

There is no prescribed negotiation strategy which can be followed for every procurement or for every firm. However, to prepare for negotiation sessions, the sponsor should strive as quickly as possible to determine any areas of disagreement and their relative importance. Using normal negotiation and bargaining techniques, the sponsor should then strive toward a level of understanding which is adequate for entering contract negotiations with a final contractor. It is essential that both the sponsor and the bidder understand what their negotiation limits are before contract negotiations begin.

Contractor Selection

During the process of competitive negotiation, the sponsor will select a final contractor, based upon the evaluation criteria, any changes or clarifications of proposals, and positions and detailed information learned during the sessions. The winner should be notified by official documentation. The sponsor should inform unsuccessful bidders verbally or by mail of the selection, the criteria which

were used in proposal evaluation, and specifically how their proposals failed to meet the criteria. The reasons must be well thought out and accurate in order to avoid bidder contest of the decision.

A public announcement of the selection should also be made.

Contract Negotiation

Final contract negotiations can begin once a single bidder has been chosen. It may be advantageous to set a schedule and deadline for contract negotiations in order to provide pressure to the contractor. Other procedures and strategies should be similar to normal contract negotiation techniques.

SECTION III: PREPARING THE REQUEST FOR PROPOSALS FOR RESOURCE RECOVERY SYSTEMS

The Request for Proposals (RFP) is the most important procurement document for communicating the requirements of the sponsor to the potential bidder. The document must be carefully prepared, concise and complete, because the bidders' decisions whether or not to respond and the quality of their responses will be highly influenced by the RFP.

In preparing the RFP the sponsor should first define for himself the overall program concept he desires to express. (The results of the planning efforts should have enabled him to do this.) He should then make sure that all appropriate items are considered and included in the RFP.

There is no such thing as a standard RFP; each RFP must be tailored to fit the needs of a specific project. This section provides general discussion and examples of each required information category, and available options for presenting the information. A checklist of the RFP information categories is provided (Table 10). The sponsor should read the description and the options provided in each section below and ask himself what characteristics of his system should be described. He can then adapt and expand the example given to fit the special needs of the project.

The examples provided here are not intended to stand alone as a completed RFP; they are merely illustrative of the type of language and the type of considerations which must be presented in each RFP section. In some cases only partial examples are provided because the level of detail required would make complete examples overly long. An actual RFP will be much more specific than the examples given here with respect to technology, markets, site, waste characteristics, financing and management. The sponsor will have to decide what to include in a specific RFP. This guide and examples are designed to aid it in making those decisions.

CONTENTS OF THE RFP

The overall organization of the RFP as described here consists of the following major divisions:

Introductory Materials - This section includes a table of contents and glossary of terms.

Table 10

RFP CHECKLIST

CATEGORIES	✓
GLOSSARY	
TABLE OF CONTENTS	
GENERAL PROGRAM DESCRIPTION	
Purpose (subject) of solicitation	
Project goals/objectives	
Specific features of project/system	
History/background of project	
Issuing sponsor	
Authority of sponsor	
Proposal schedule	
Bid briefing	
Proposal due date (address and sponsor contact)	
Estimated selection/negotiation dates	
SYSTEM DESCRIPTION AND PERFORMANCE REQUIREMENTS	
Technical performance requirements	
Process restraints, preferences, requirements	
Detailed specs (A&E approach)	
Performance specs	
Process input/output description	
Solid wastes inputs	
Quantity (municipal, commercial, industrial, etc.)	
Composition	
Solid wastes deliveries	
Number and type of truck	
Schedule	
Solid wastes excluded	
Quantity/quality of residual required	
Fuel and material product specs	
Type of transfer/transport required	
Arrangements required for residue sale/disposal	
Size of facility (capacity)	
Process redundancy/reliability requirements	
Receiving, storage and product/residue handling	
Back-up landfill	
Disposal methodology	
Future expansion/addition to facility	
Other provisions (e.g., visitors, signs, fences, etc.)	
Management performance specifications	
Schedule (design & construction, test, operation)	
Management methodology and controls	
Contractor responsibilities	
Control techniques	
Reporting channels	
Program interactions	
Participant responsibilities	
Auditing procedures	
Approval process (procedures, responsibilities)	
Labor & hiring specs (equal opportunity employer, etc.)	
Marketing responsibilities/arrangements	
Personnel qualifications	
Economics and Financing	
Sources of financing anticipated	
Legal stipulations	
Fees and payments	
Escalator factors	
Revenue sharing	
Environmental and aesthetic specifications	
Contractual considerations	
Ownership (land, facility, refuse, landfill, products)	
Lease arrangements	
Process guarantees	
Insurance	
Patent rights	
Royalties	
Payments and schedules	
Risk sharing	
Tonnage guarantees	
Negotiable terms and conditions	
Re-opener clauses	
PROPOSAL REQUIREMENTS	
General	
Proposal bid bond or deposit (refundability, etc.)	
Submission deadlines	
Number of copies, page limits	
Issuer's financial and legal liability	
Amount of time proposal and bond are good	
Handling proprietary information	
Executive summary	
Detailed proposal requirements	
Technical design proposal (reports, drawings, etc.)	
Management proposal (pert charts, flow diagrams, etc.)	
Bidder qualifications	
Marketing proposal (letters of intent, etc.)	
Financial proposal	
Cost assumptions (financing charge, rental fees, etc.)	
Environmental impact and aesthetics	
EVALUATION PROCESS	
Methodology/approach	
Evaluation team - arrangements/participants	
Technique/format	
Evaluation criteria	
APPENDICES	
Related reports	
Site information (soils, borings, access, etc.)	
Permit regulations/requirements	
State, local, federal, legal requirements	
Environmental	
Zoning	
Building	
Sample contract or lease	
Letters of intent	

- General Program Description - This section provides an overview of the resource recovery program.

- System Description and Performance Requirements - This section describes the sponsor's plans for the system and defines the responsibilities required of the selected contractor.

- Proposal Requirements - This section describes the required format and contents of the bidders' proposals.

- Evaluation Process - This section describes the criteria and process for evaluation of proposals.

This format is provided as an example of a method for supplying organized and complete information to the bidders. Variations on this format may be utilized where special issues dictate.

INTRODUCTORY MATERIALS

Both a table of contents and a glossary should be included in the initial section of the RFP. A full table of contents is critical to permit readers easy access to specific RFP sections. Likewise, it is important to include a glossary of terms used in the RFP in order to prevent misunderstandings. Terms (such as processing, facility, residue, contractor and user fee) should be clearly defined according to the intent of their usage. The glossary should be placed at the beginning of the RFP to provide the bidders early familiarity with the terms and to permit easy reference during the bidders' reading of the RFP.

Example:

Facility - The building and machinery to be constructed to recover resources from solid waste as a result of this solicitation.

General Program Description

This section gives an overview of the resource recovery program and provides information about the specific project and the personnel who have been involved in its planning and implementation. It also defines the purpose of the solicitation. The more important subjects to be addressed are discussed below.

Solicitation Purpose

The prospective bidder will want to know on what elements of the overall solid waste resource recovery system he is bidding. These elements could include:

- design only
- project management
- design and construction
- design, construction and operation
- design, construction, operation and ownership
- supply or operation of transfer stations, vehicles, etc.

This section may take the form of a work statement to indicate to the bidder the elements for which he, as contractor, will be responsible.

Example:

The procurement sponsor shall select a contractor to perform the following services:

- *To design the solid waste resource recovery facility in accordance with the sponsor's conceptual design, and supervise the construction activities on behalf of the sponsor under a fixed price agreement. The sponsor will issue separate contracts for construction.*
- *To provide supplemental management services and personnel during plant start-up, on a cost plus fixed-fee agreement.*
- *To provide operating, maintenance and marketing management services for a 5-year period on a fixed tonnage basis, subject to annual renegotiations.*

Project Goals and Objectives

This section should outline key characteristics of the planned resource recovery system. For instance, low capital cost, low operating cost, high technical reliability, highly marketable products,

high percentage of recovery, strong financial position or any combination of the above may be critical to the sponsor's decision in choosing a system. The bidder should be informed of the sponsor's standards, although these standards or preferences do not have to be expressed in weighted values. If the sponsor expects the contractor to accommodate source separation programs, this intention should also be stated.

Summary of Specific Project Features

Although detailed specifications of the system will be provided later in the RFP, a summary of the features of the project as it is envisioned in the planning stage will be helpful to the bidders' initial understanding.

Potential items to be included in the summary description are:

- Numbers and types of major facilities to be constructed (processing facility(s), transfer stations)
- Method of financing
- Responsibilities for collection, transfer, transport, processing, marketing and disposal of refuse
- Ownership
- Term and type of contract
- Method of ultimate disposal

Program History and Sponsor's Legal Authority

This section should describe the history and current status of resource recovery planning in the area, especially an identification of the procurement sponsor and its authority to carry out the plan. This information will indicate to prospective bidders the amount of effort already expended on resource recovery planning, the seriousness of the sponsor and the legalities involved in the selection of a contractor. Relevant legal authorities of the sponsor which should be described include such issues as its control over the waste stream, ability to engage in negotiated contractor selection, authority to enter long term contracts, financing authority, and ability to enter minimum guarantee contracts.

Proposal Schedule

The introductory section may also include a summary of the proposal schedule. Specifically, the date and location for bidders' briefing, proposal due date, address, sponsor contact, and estimated selection or negotiation dates should be provided.

System Description and Performance Requirements

The purpose of this section is to provide the specifications for the system and other information which may be useful to the bidder in preparing a proposal. The section may be organized in any order desired by the sponsor but should include the subjects described below.

Technical Performance Requirements

The technical performance requirements should address the process requirements, refuse inputs, processing plant outputs, facility capacity, and process reliability. The degree of technical specification depends upon the amount of detail which is known to the sponsor at the time of RFP preparation. Process or product choices, the waste stream composition and quantity, and the degree of process reliability desired should be defined as fully as possible, so the bidder knows the design parameters within which he is to propose.

Process Requirements

The purpose of this section is to describe the sponsor's choice of technology and the products to be produced. The process requirements can range from being highly specific about the technology and products desired to requesting the bidder to propose the process and products. If the sponsor has studied and selected a desired technology-market configuration or if it has obtained strong market commitments, it may be able to specify the technology and product types. An advantage of selecting the process and product prior to the RFP preparation is that the evaluation of proposals will be easier if all bidders propose similar equipment and products. On the other hand, the sponsor may desire to keep the selection of technology and process open so as to encourage participation by a number of bidders and processes.

Three levels of specification and their respective process requirements are provided here:

Specified Process and Product. If the product and process types are preselected, but a detailed design has not been done, the RFP can provide a definite process specification and a product specification(s).

Process specifications generally enumerate the unit processes required, specific equipment desired, provisions for process redundancy, modular design, contingency design, and plant flexibility.

Product specifications generally prescribe the type of products required from the facility. These include such requirements as: temperature, pressure and quality for steam, quality and form for ferrous metals, quality and color limitations for glass, quality and form for shipment for paper, and physical form, BTU content, chemical composition, and moisture content for fuels.

Specified Product. If a market for recovered products has been determined, but a process has not been selected, the technical specification can consist of product specifications as described above.

Open Process. If neither process nor product is specified, the RFP should provide operational requirements which generally describe only the plant capabilities desired. The plant capabilities include such requirements as plant capacity, site, downtime, degree of volume reduction, environmental impact, delivery schedule, safety and storage. These requirements should also be provided for product and process specified RFP's, as will be outlined in the following sections.

Example:

Specified Process and Product

The bidder will propose to design, construct and operate an advanced solid waste resource recovery system using shredders, air classifiers and magnetic separators. The system will ultimately be capable of processing a nominal 2000 tons per day of municipal solid waste in redundant process lines to produce a ferrous metal product, mixed nonferrous metal product, and a shredded paper fuel material suitable as a supplemental fuel in suspension-fired, coal burning boilers.

Specified Product

At the minimum, the plant must be capable of producing steam to meet the specifications of the market, recovering ferrous metals, and providing at least 80% volume reduction of all solid waste delivered.

The Acme Light and Power Company will cooperate with prospective proposers to the extent of quoting a price schedule and product specifications for the purchase of steam.

Open Process

The bidder will propose a system to recover resources from solid wastes which can be marketed. These resources may be in the form of energy such as shredded fuel material, oil, gas, steam or electricity, or in the form of materials such as paper, corrugated paper, pulp, metals, or glass. No specific products are required. Marketing guidance is provided in the Appendix.

Solid Wastes Inputs

For all types of RFP's, the characteristics of solid wastes in the area which is to be serviced by the facility should be described as fully as is practicable. If knowledge of local waste quantities or composition is limited, further studies may be necessary. If composition studies are done, it should be remembered that waste characteristics can change significantly from season to season. Some characteristics which may be described are:

- Quantity and types of refuse - municipal, commercial, industrial, demolition, sludge, etc.
- Composition - percentage of paper, glass, ferrous, and non-ferrous metals, plastics, leather, rubber, textiles, wood, food wastes, yard wastes, moisture, etc.
- Refuse categories which are excluded from the processor's responsibilities, e.g. hazardous, pathogenic, demolition, etc.
- Number and types of vehicles which will deliver refuse
- Schedule of refuse deliveries

Example:

The contractor will process municipal and commercial refuse. The contractor will not be responsible for processing hazardous, pathogenic or explosive wastes. The municipal refuse has been estimated through a series of sampling studies to have the following composition by weight:

Refuse Category	*% of Total by Net Weight*
Paper	*35.8*
Glass	*8.4*
Ferrous metals	*7.6*
Nonferrous metals	*.6*
Plastics	*1.3*
Leather, rubber	*1.4*
Textiles	*1.9*
Wood	*2.3*
Nonfood Product Total	*59.3*
Food Wastes	*18.7*
Yard Wastes	*20.4*
Miscellaneous	*1.6*
Total	*100.0*

Refuse will be delivered in municipal collection vehicles (_____ per day), private packer trucks (_____ per day) and in transfer vans (_____ per day). Regular deliveries will be made during the following hours: 7:30 a.m. to 4:00 p.m., Monday through Friday, and on Saturdays from 7:30 a.m. to noon. Saturday delivery hours will be extended to 4:00 p.m. during holiday weeks.

Processing Plant Outputs

All known specifications of products and residue which will be produced by the facility should be indicated. These descriptions should be as specific as possible even if the process is unspecified in the RFP. Requirements might include:

- Minimum recovery, by weight or volume, or
- Limitation on quantity of raw refuse which can be disposed by alternative means.
- Process residue specifications (quantity and quality).
- Fuel and material product specifications, including any specifications for marketable products which have been committed, and including transportation responsibilities.

- Specific markets that must be serviced.

- Arrangements required for residue sale or disposal including transportation, secondary processing markets for residue, specified disposal locations, or required backup disposal capabilities, etc., if determined.

Example:

Residual Products

The residue from the resource recovery process must not exceed 20 percent, by weight, of the incoming solid waste.

Fuel and Material Product Specs

- *Specified process: The product specifications are provided in the Appendix.*

- *Open Process: The bidder is required to make market arrangements for his own product(s). Some marketing guidance is provided in the Appendix.*

Transportation

The contractor must arrange for transportation of its products to the market and for transportation of its residue to the residue disposal site located 15 miles from the facility site.

Residue Sale

The contractor may arrange for sale or delivery of the residual materials to any residue processing facility.

Residue Disposal

The contractor shall dispose of process residues in a sanitary landfill operating under a permit from the State Department of Environmental Conservation.

Facility Capacity

The capacity of the facility, requirements for storage, and accommodations for variations in the quantity of refuse delivered should be included as precisely as possible.

Example:

The facility must be capable of receiving a nominal 2000 tons per day of raw refuse. Seasonal variations will range from 80% to 130% of this figure. The facility must be capable of storing up to one week's raw refuse under cover in periods of downtime.

Process Reliability

There are several ways in which the reliability of the system may be guaranteed. One way is to require specific technical design such as a large storage area and/or equipment redundancy which will accommodate equipment malfunction. Another way is to establish a reliability requirement (e.g., a maximum number of days of raw refuse landfill), with damages to be paid to the sponsor if this maximum is exceeded. This method allows the bidder to determine his own technical means of establishing reliability. The requirement which is established by the sponsor should be carefully outlined because it is as an important factor in bidder design and cost calculations.

Example:

Technical Design Requirement

It is desirable that the facility be designed so that no single point of failure will prevent the plant from functioning. Complete duplication of dry fuel preparation lines is to be utilized to lessen the probabilities of total plant shutdown due to mechanical failures. The facility shall be in condition to process the required capacity for a minimum of 50 weeks each year.

Reliability Requirement

In lieu of establishing a specific reliability requirement, a clause will be negotiated to require the contractor to make damage rebates to the sponsor for every day over 12 per annum that it uses the raw refuse contingency landfill.

Material Handling

If there are any specific methods desired by the sponsor for handling of raw or processed materials, they should be described to the bidder. These methods might include storage under cover, safety considerations, movement of equipment, fire control, scale specifications and traffic patterns.

Example:

All unloading shall be done under cover and the unloading areas shall be constructed so as to minimize wind interference. The traffic pattern shall be designed to provide efficient operation and use of space. Scales will be equipped with automatic printers which will record the time, date and scale weight for identification and accounting of loads.

Future Expansion

Any future requirements in terms of capacity, additional recovered products or new types of wastes (e.g., sewage sludge) should be identified, along with any necessary information such as land availability, power restrictions, or environmental requirements. A requirement on the contractor to plan or implement such future additions should also be identified.

Example:

The bidder is encouraged to include plans for future construction of additional resource recovery operations which may be economically merited, for instance, aluminum recovery, newsprint separation, residue processing or electrical generation.

Other Considerations

There may be other technical specifications of the system, such as accommodations for visitors, identification signs, fences, etc., which should be described here.

Management Performance Specifications

The purpose of this section is to identify the responsibilities and roles of the sponsor and contractor, as well as the schedules involved in system implementation and operation. The items that should be included are scheduling, management methodology and controls, reporting channels, auditing procedures, approval requirements, labor and hiring specifications, marketing responsibilities and arrangements, and personnel qualifications. A description of each is presented below, with examples where appropriate.

Scheduling

The bidder must be aware of the anticipated schedules for all phases of the system implementation and operation. For the design and construction phase, provisions must be indicated for compliance

with a predetermined construction schedule or for negotiation of that schedule. A shakedown period schedule for testing of the facility prior to full operation should include time periods, notification dates, provision for delivery and payment for refuse. Operating schedules should designate refuse receiving hours, operating hours, maintenance schedules, and facility downtime. Known schedules for additions or expansions of the facil ty should be included. The schedule should also define the term of agreement for operation of the facility.

Example:

The facility shall be fully constructed in 2.5 years from the contract date. An additional 6-month period shall be allowed for purposes of shakedown and testing.

Upon completion of plant construction, the contractor shall notify the sponsor that it wishes to accept refuse for shakedown. The contractor may specify the schedule for and quantities of refuse to be delivered to the facility for testing.

Management Methods and Controls

This section should summarize the contractor's management responsibilities and control requirements. Specifically, a description of the techniques and controls which are necessary for management of successful facility implementation should be provided. These controls may include reporting procedures, monitoring responsibilities, payment responsibilities and management master plans.

Example:

The contractor is expected to employ project management and control techniques to provide the necessary information to both the sponsor and the contractor for effective management of the program. It is responsible for providing experienced management and technical staffing to support all project phases. A PERT chart shall be prepared by the contractor for the sponsor's use in monitoring progress.

The contractor shall supply verbal weekly activity reports, monthly letter reports and detailed quarterly reports during all phases through initial operation.

Monthly financial reports shall be submitted to detail the budget, reflecting actual expenditures, commitments, and projected expenditures.

Reporting Channels

This section should outline the required interactions among participants at all stages of implementation and operation. Some major issues to be discussed include sponsor or other agency contacts during the design and construction stage and notification of facility readiness for testing and for sponsor inspection.

Responsibilities of Participants

Responsibilities of all participants (communities, private industry, sponsor, contractors) in collection, transport, processing, marketing and disposal of refuse and processing output should be defined.

Auditing Procedures

If the sponsor intends to require that the contractor allow auditing of certain books, the provisions for audit should be outlined in the RFP. A description of the persons who will conduct the audit and notice of the audit frequency should be provided and a format may be specified.

Example:

The sponsor will reserve the right to audit the books of the resource recovery facility. Sponsor audits will be conducted annually at the sponsor's expense.

Approval Requirements

After selection of the contractor, many public approvals may be required during design, construction and operation of the facility. The approvals and their estimated time requirements should be specifically identified. Such approvals may include site assignment, design approval, equipment approval, safety and other local permit approvals, building permits, environmental impact approvals, legal contract approvals and financing approvals. The RFP should define the specific approving agency and the party (sponsor, contractor and other) responsible for obtaining the approval.

Marketing Responsibilities and Arrangements

If arrangements have been made for marketing of products recovered from the refuse, these arrangements should be described in detail including degrees of commitment for purchase, market contact names and

addresses, product specifications, transportation distances, quantities committed, and any other available information. A description of the contractual and operational market relationship among the contractor, the sponsor and the markets should also be given.

If no market commitments have been obtained, the bidder should be provided with a definition of his market responsibilities and the responsibilities of the sponsor or of other parties. Market contacts or other leads will be useful to the bidder in establishing market arrangements and should be provided in the Appendix.

Example:

It shall be the responsibility of the contractor to seek out, negotiate for and develop markets for the materials recovered through processing. Letters of intent outlining product specifications, quantities, and price ranges for all energy and ferrous products must be included with the proposal. A number of potential markets and customers for recovered products have been identified and are outlined in the Appendix.

Personnel Qualifications

The sponsor may require specific personnel qualifications during design, construction and operation of the facility such as professional engineer registration. If so, the requirements, the stages for which they are applicable, and reference to applicable statutes should be provided.

Safety Specifications

Any applicable health and safety regulations such as OSHA regulations or local fire codes should be stipulated.

Labor and Hiring Specifications

Hiring requirements such as equal opportunity employment and use of local wage rates or local union labor force must be described.

Economics and Financing

This section should describe all aspects of the financing plan proposed for the system including sources, legal stipulations, fees and payments, escalator factors, and revenue sharing. A description of each aspect is provided below, with examples where appropriate.

Financing Source

The source(s) of financing which is available for the project has to be identified along with an outline of the respective responsibilities of the sponsor and contractor in obtaining or proposing such financing. The relative contribution of each financing source, mechanism for obtaining each, and estimated interest rates should also be identified.

The sponsor may have goals for financing of the facility. For example, public or private financing may be preferred. If so, these preferences and the reasons for them should be noted.

Example:

It is the intention of the sponsor that the system will be financed by publicly issued tax-free pollution control revenue bonds, unless it is determined that contractor or other private party financing can provide a lower user cost.

For the purpose of calculating a debt service cost, the bidder should assume that revenue bond financing is available at a cost of capital of 7%. He may, in addition, indicate whether private equity is available to him and what the resulting impact on net cost would be.

Legal Stipulations

Any existing legal requirements or constraints for financing of resource recovery activities via particular financing means should be noted.

Fees and Payments

A definition should be given of all fees and payments which will involve the contractor. Such fees may include service fees from the communities, revenue from markets, disposal fees for disposal of residue, and administrative fees for services performed by the sponsor or other agency. Payor and recipient should be identified along with the method for determining the amount of each payment, either by bid, negotiation, cost basis, or other calculation. A specific schedule for payments should also be included.

Escalator Factors

The bidder should be informed of provisions for escalator factors or he may be asked to propose them himself. Furthermore, escalators may be applied during any or all of the design, construction and operating periods.

Example:

The contractor shall propose methods of user fee and construction cost escalation and shall specify which cost factors are subject to such escalation. Escalators may be renegotiated before a contract is finalized.

Revenue Sharing

If not addressed under Fees and Payments, arrangements for sharing of market revenues with the user communities should be defined. Again the sponsor may specify the revenue sharing plan, or may ask the bidder to propose one.

Example:

For the purpose of calculating net disposal fees, the contractor shall assume that resource recovery revenues are shared with the user communities on a 50%-50% basis. The contractor may additionally provide an alternative revenue sharing schedule, with a justification for it. This addendum may be a basis for later negotiations.

Environmental and Aesthetic Specifications

The bidder should be informed of all environmental standards and regulations with which he will be required to conform, in addition to other environmental or aesthetic specifications of the sponsor. The relevant environmental regulations and a list of necessary permits may be included in the Appendix.

Example:

The proposed project shall meet all pertinent Federal, state and local environmental and health requirements and standards. Such regulations cover all aspects of the project including construction and operation, all solid/liquid/gaseous emissions, and all salable and non-salable products of the process. A list of the pertinent regulations and requirements is included in the Appendix.

Contractual Considerations

The pattern of design, construction, management, ownership and operating responsibilities selected for the facility requires certain legal instruments. Some of the possible types of instruments are:

- design and engineering services contract
- construction contract
- project management contract
- equipment supply contract
- full service contract
- lease for land (if sponsor owns)

The bidder should be informed as to which of these instruments apply to the given solicitation. The bidder should also be given an indication of any contractual issues which have not been described earlier. These issues may include: ownership responsibility, lease arrangements, performance guarantees, insurance, patent rights, royalties/taxes, risk sharing, and negotiable terms and conditions. A description of the type of information required in each of these areas is provided below.

Ownership

Ownership of various components of the system (land, facility, refuse, transfer stations, landfill, products) during the construction period, the operation period, and the end of the term of agreement should be defined. Specific application of financing provisions or other laws which govern ownership should also be cited.

Lease Arrangements

If any part of the land or facilities is to be rented, the terms and arrangements for lease, ownership and payments should be outlined.

Performance Guarantees

Provisions for performance bonds and/or labor and materials bonds should be defined. The amount of the bonds or the process for the determination of the amounts should also be listed.

If the sponsor desires liquidated damage provisions in the contract, these should be described with occasions for use and amounts and basis for determination. In addition, if there are any limits to the financial risk to be placed upon the contractor, mention of the maximum should be made here.

Insurance

Statutory insurance requirements should be identified so that the bidder may include them in his costs.

Patent Rights

Any special provisions for retaining or acquiring patent rights should be stated.

Royalties or Taxes

The facility may be subject to state or local property taxes or to a royalty fee in lieu of taxes. These provisions and the amounts to be assessed should be identified so that the bidder may include them in his costs. If an exact figure is unknown, a reasonable assumption should be provided for the purpose of bidding.

Sharing of Risk

The subject of risk sharing is one of the most important in the procurement process since a variety of uncertainties exist in the areas of technology, markets, and environmental control. Provisions for the sharing of risk will have to be clearly outlined in the contract and in the RFP, if such provisions are known at the time of preparing the RFP. Frequently, process, product and financing uncertainties make it inappropriate to discuss risk sharing provisions in the RFP; in such a case, the RFP should define the process for negotiation of the risk sharing provisions which have not yet been determined. The Risks and Contracts Guide of this series of Implementation Guides discusses risks in more detail and relates the risk sharing formulae that have been used in some cities.

Negotiable Terms and Conditions

A number of other issues in a service contract between the processor and the user communities or in a contract for facility construction and operation may need to be negotiated at a later date. These issues should be identified. Major negotiable items may include:

- Actual user fees and residue disposal fees based upon cost changes since the time of proposals
- Escalator factors
- Revenue sharing formulas
- Operation of the facility beyond the initially agreed term of operation
- Minimum and/or maximum guarantees of refuse as inputs to the facility, the periods for which they are guaranteed, the frequency with which they may be readjusted
- Failure to perform clauses (i.e., liquidated damages)
- Contract re-opener clauses
- Cost readjustment clauses for future introduction of governmental rules or regulations which may impose cost or operating penalties upon the contractor.

Proposal Requirements (Formal Instructions to Bidders)

The purpose of this section is to specify the contents and the format of the proposals so that all proposals will contain the information required by the sponsor displayed in a uniform fashion.

It is important that the evaluation criteria and procedure for evaluation be selected by the sponsor prior to RFP preparation. Then, the dictated proposal format will correspond to these evaluation criteria, sectioned according to evaluation procedures. For instance, the major evaluation criteria which are chosen may be bidder qualifications, management and marketing capabilities, technical design, and costs and pricing. The proposals should then be structured so that bidder qualification, management and marketing, technical design, and costs and pricing information are in separate sections for the purpose of evaluation. Within each section, specific information should be requested and specific forms or tables may also be required.

General Requirements

Certain general information concerning proposal submission must be provided to the bidders. The deadline for submission of proposals, the number of copies requested and any relevant page limitations must be included. The bidders will need to know what type of bid bond or

deposit if any is required, its amount, its form, the term and conditions of its retention, and the conditions for its refund.

This introduction should also include a description of specific financial or legal responsibilities of either the procurement sponsor or the bidder. Examples of specific responsibilities might be statutory requirements for handling of proprietary information in proposals, competitive bid laws which require specific procedures for handling and reimbursing bid bonds or time limitations for validity of proposals. Any such specific requirements must be clearly outlined for the bidders to prevent improper submission of proposals or proposal bonds.

Example:

Prospective bidders are notified that all information submitted as a part, or in support, of proposals will be available for public inspection in compliance with Chapter ___ of the State Statutes.

The next step in the explanation of proposal requirements is a more elaborate description of the information which is desired in each proposal section. The Executive Summary should be the first item required. Its page limitations should be noted and a list of the items which are required in the Executive Summary should be given in just a few sentences. The detailed proposal requirements should then be outlined as described below.

Detailed Proposal Requirements

The proposal should be organized according to evaluation criteria categories to allow for systematic review and evaluation. The suggested proposal format shown here corresponds to the detailed sample evaluation criteria and evaluation process description provided in the Evaluation Process section of the RFP (e.g., Table 14).

In some sections it may be desirable to provide charts or tables for the bidder to fill in with the requested information. Although it may be extremely difficult to provide a complete, universally applicable table in some cases, the standardized table method can facilitate the evaluation process. Sample tables are included under the specific topics to which they apply.

Technical Design Proposal

This section should specifically request all of the technical design information which the sponsor requires to determine if the proposed design is reasonable and will meet the disposal needs of the community(ies) it will serve.

Specific design information that may be requested from bidders might include the following:

- A statement and discussion of the total proposed process (preliminary design) including: technical specifications, total storage capacity, design and optimal processing capabilities for each unit, and the proposed general configuration of the system components.

- A proposed Statement of Work with explanation of technical approaches, and a detailed outline of the proposed program for executing the technical requirements.

- A complete process flow diagram.

- Graphic representations including: layouts, sketches, diagrams, calculations, curves, and other data necessary to illustrate the proposed technical approaches and program.

- A general plan identifying all equipment in the process flow and locating such equipment showing general dimensions, buildings and surrounding structures.

- Plans which clearly indicate the function, size, operation, performance and quality of each unit process shown in the process flow diagram.

- A statement and schematic presentation of the energy and materials flow indicating: the quantities and types of input materials, the energy required in BTU's for each of the major processing functions, the materials output at each of the major processing functions where applicable, the quantity of residue as percentage of raw refuse input, and a statement of equivalent BTU's per input ton of refuse where output is a form of energy.

- A statement and discussion of anticipated downtime, including scheduled allowances for major overhaul and other repairs and an estimate of time for unscheduled shutdown and a statement of the possible causes.

- A statement of the number of expected days of process downtime when refuse accumulation will exceed the storage capacity.

- A statement of agreement to use the specified site and a discussion of any site-related construction or operational problems that are anticipated.

- Plans for emergency conditions, including safety precautions, quench areas, preventative maintenance, redundancy and storage capabilities.

- A statement and discussion of anticipated major equipment difficulties and other problem areas, together with potential or recommended approaches for their resolution.

Marketing Proposal

This section should specifically request the marketing information which is necessary for selection of a process and contractor. The amount of information will depend upon whether the sponsor or the contractor is responsible for marketing of products. The following is an example of requests for marketing information where the sponsor has performed only a preliminary market survey.

Example:

Specific marketing information provided by the bidder should include the following:

- *Full description of markets for recovered materials and energy including quantities, locations, degree of commitment, quality specifications, and further marketing efforts planned to meet long term market changes.*

- *Concrete (written) evidence of successful marketing for the products described in this proposal. (This type of evidence will weigh heavily in the contract award deliberations. The level of commitment will be evaluated on the basis of whether signed contracts or letters of intent for products exist.)*

- *Market commitments should specify the following: quantity of product to be sold, quality of the material to be sold, product specifications, provisions and duration of commitment, price range or basis for pricing of salable products.*

Management Qualifications and Proposal

This section should specifically request the management information which is necessary to determine whether the bidder has acceptable management capabilities and whether the proposed management for the facility is adequate.

Some of the background of the bidder's management capabilities may be provided in a qualifications statement received prior to issuance of the RFP. In this case, management background does not need to be requested again. If there is no prequalification stage, it will be necessary to require a statement of management capability in the proposal. A table format can be utilized for this purpose. Information which should be requested in the RFP concerning the proposed management of the facility includes:

- Full description of the proposed management philosophies, incentives, roles and responsibilities of participating firms, individuals or other groups, and contractual services required.

- Documentation of commitment and backing of parent company or other firm, if applicable, which will lend management, financial or other support to the enterprise.

- Personnel who will be assigned responsibilities for design and construction supervisory services on this program. Information which will show the composition of the task or work group, its general qualifications, and recent experience with similar programs is required. Included should be names of registered designers and engineers responsible for preparing the design and proposal. Special descriptions shall be given of direct technical supervisors and key personnel, and the approximate percentage of the total time each will be available for this program. Resumes are desirable to indicate education, background, recent experience and specific scientific or technical accomplishments.

- A table of personnel organization for the management and operation of the plant and related functions with job descriptions of each personnel classification. Resumes of key management and technical personnel are also desirable to indicate education, background and recent experience.

- Additional personnel, and organizations, if any, who will be required for full-time employment, or on a subcontract or consultant basis. The technical areas, character and extent of subcontract or consultant activity should be indicated, and the anticipated sources should be both specified and qualified.

- Description of long term management or master plan.

- Description of maintenance policies, including a listing of maintenance personnel indicating work schedules and job descriptions.

- Description of policies for accommodating public or governmental visitors in accordance with specifications.

- A detailed schedule of the entire project from inception of design through full-scale operation, including construction completion date, and schedule for plant shakedown and startup.

- A description of the safety policies.

Financial Proposal

The sponsor must know the financial status of the bidder and the financial plan proposed. Some financial data may be obtained from the bidders during a prequalification stage, but if not, Table 11 is a sample of requests for bidder financial information. Regardless of whether or not prequalification is utilized, a basic description of the proposed financial plan must also be required.

Economic Proposal

This section should specifically request the economic information needed by the evaluators to determine the economic impact of each proposal. The degree of detail requested will depend upon the level of economic analysis to be conducted during the evaluation stage. However, the minimum economic information required in the RFP is the system's capital cost, annual debt service, operating costs, anticipated market revenues, and an anticipated net per ton disposal fee. An example of requested economic information is shown below. A standardized cost table may be used if a tabular approach is preferred, such as the one provided in the Accounting Format Guide of this series of guides.

Table 11

Request for Bidder Financial Data
(Sample Form)

Contractor Name:_____

Total Current Assets*:_____

Total Fixed Assets:

- Reserve for Depreciation _____
- Buildings (Net) _____
- Equipment (Net) _____

Total Current Liabilities:_____

Working Capital:_____

Current Ratio:_____

Annual Interest Expense (Long term debt):_____

Equity Composition:

- Preferred Stock _____
- Common Stock _____
- Earned Surplus _____

Debt to Equity Ratio:_____

Sales (Annual $ Volume):_____

Profit:

- Return on Equity (last complete year)_____
- Return of Equity (average)_____

Current Backlog in Resource Recovery:_____

Current Credit/Bond rating (e.g., Dunn & Bradstreet):_____

Proposed Financing Plan:

- Contractor's Share (%) of Total Investment_____
- Source of Funds:

Source	Interest Rate
_____	_____
_____	_____
_____	_____

*Provide financial data for most recent complete year.

Example:

Requested Economic Information

The following minimum data and information should be provided in the economic proposal:

- *A firm fixed per ton user fee for each different operating level outlined in the RFP.*
- *A full description of the contractor's proposed formula for adjusting the user fee for cost changes in the price over the program life or for variations in the annual tonnage throughput.*
- *A breakout of the debt service component of the user fee.*
- *A full description of the resource recovery revenue sharing schedule.*
- *Cost proposals fully supported by cost and pricing data adequate to establish the reasonableness of the proposed user fee.*
- *Cost data for all stages of construction and operation including, but not limited to, site development cost, direct construction costs, contractor costs, equipment costs, costs of performance and labor and materials bonds, financing costs, O&M costs, expansion costs, and market or transportation costs.*
- *A full description of the contractor's proposed formula for adjusting the construction cost to the initial starting date.*

It may be necessary to provide certain cost assumptions to the bidder because many economic factors are unknown until the implementation of the plan. In this case, cost assumptions in the RFP will permit the bidders to base their price proposals on the same assumptions so that they can be evaluated comparatively. Some economic factors which may have to be assumed are: financing charge (interest rate), escalator factors, inflation factor, rental expenses, property taxes, landfill disposal, and transportation costs.

Example:

The cost assumptions below are provided to the bidder for his use in preparing proposals. A base per ton user fee will be proposed by the bidder on the basis of these assumptions. Where actual costs (i.e., landfill costs, financing charges, rentals etc.) are found to differ from the assumed costs, the user fee will be adjusted during contract negotiation to reflect the actual costs.

- *All costs are to be submitted in 1975 dollars.*
- *The contractor is to contract with local communities for a 20-year fixed price, full service contract.*
- *Seasonal variations in raw refuse input are expected to vary from 80% to 130% of expected monthly tonnages.*
- *A site will be provided with a 20-year lease. The land rental will be paid directly to the sponsor. For purposes of pricing it may be assumed that the rental will be $12,500/year.*
- *The host community is to receive a disposal fee of one dollar per input ton as an equivalent for property taxes.*
- *Any non-salable residue will be transported to and disposed of at a landfill for a total cost of $5.00 per ton of residue.*
- *Raw refuse will be disposed of during periods of downtime for a total transport and disposal cost of $8.00 per ton.*
- *Twenty year Industrial Development Revenue Bonds will be available at a 7 1/2% carrying charge.*

Environmental Impact and Aesthetics Proposal

This section should request the environmental and aesthetics information which the sponsor requires to determine whether the proposed facility will comply with appropriate environmental quality regulations and aesthetics standards.

Some environmental information may not be known before the facility is fully designed or constructed. Nevertheless, as much detail as possible should be requested for certain critical areas of major environmental impact. Requests for information should include data which will be useful for preparation of environmental impact statements or permit applications so that preparation of these documents can begin early. A brief example is shown below and a more complete presentation of some required data is shown in Table 13.

Example:

The proposals will include the following environmental information:

Architecture

- *Professional qualifications of a registered architect who will be responsible for the building, site and landscape designs. Include photographs of at least three projects designed by this person, at least one of which is an industrial building.*

- *Architectural rendering of the proposed processing plant and environmental setting, including in detail the landscaped appearance from the road and other directions, with both planometric and isometric views.*

Evaluation Process

The purpose of this section is to describe to the bidder how the proposals will be examined and which subject areas will be most closely scrutinized. It is important for the bidder to be aware of the criteria by which proposals will be judged in order for them to devote adequate proposal effort to the most critical areas. A detailed description of the evaluation process itself is less crucial and may be optional in the RFP.

Methodology/Approach

This section should reiterate the project goals and objectives, with particular emphasis on their relation to the evaluation process.

Evaluation Team

The bidder will want to know who will participate in proposal evaluation. This section need not identify specific persons; the names of groups or agencies involved and the areas of evaluation with

Table 12

Sample List of Environmental and Aesthetic Data to be Considered in Resource Recovery Facility Implementation

Architecture

- Professional qualifications of a registered architect who will be responsible for the building, site and landscape designs. Include photographs of at least three projects designed by this person, at least one of which is an industrial building.
- Architectural rendering of the proposed processing plant and environmental setting, including in detail the landscaped appearance from the road and other directions, with both planometric and isometric views.
- Percentage of the project cost that will be earmarked for the aesthetic aspects of architectural design, and in what manner will these funds be spent.
- Measures and architectural features proposed to enhance the appearance of the processing plant and its harmony with the environment.
- Major alternative measures and architectural features that have been considered to enhance the appearance or environmental harmony of the proposed plant, and why rejected.

Construction (List as much of this information as is available)

- A complete outline of the methods of construction, keyed where possible to the timetable described in the RFP. Include estimated numbers and categories of employment; an inventory of types and quantities of equipment; and types, amounts, and sources of construction materials.
- Special construction methods or techniques proposed as a result of the particular geologic, hydrologic, and other environmental aspects of the proposed site.
- Comprehensive estimates of utility requirements (e.g., water, gas, oil, electricity) during construction.
- Any traffic impacts expected during construction, e.g., the temporary diversion of vehicular traffic, and the use of or effect on nearby roads (reference approximate daily timetables)
- Measures proposed to reduce the amount of air pollution caused by construction (e.g., selection of equipment, dust controls).
- Approximate noise levels, if known, for each type of equipment.
- Extent and character of construction noise, and what provisions will be taken to minimize damage from construction-related noise.
- Nature, composition, flow, and provisions for water effluents occurring during construction.
- Nature, composition, quantities, and provisions for disposal of solid wastes occurring during construction.
- Any additional environmental emissions, data, effects, measures, and alternatives related to or resulting from construction.

Process Design and Plant Operation (Include relevant information for all anticipated scales of operation)

- Comprehensive estimates of utility requirements (e.g., water, sewer, gas, oil, electricity) during the test period and during full operation.
- Measures proposed to reduce energy consumption during plant operation.
- All known atmospheric emissions arising from the operation of the proposed plant (e.g., levels of SO_2, CO, NO_x, hydrocarbons, particulates, ash, sulfur, chlorine, other). To the extent feasible, provide supporting data and methods used in arriving at these air quality determinations, including evidence that all pertinent air quality standards are met by the proposed plant.
- Special measures and controls proposed to minimize the levels of harmful atmospheric emissions. Include relevant features of the plant or process design.
- Alternatives to these measures and controls that have been seriously considered, and why rejected.
- Expected noise levels (above the background level) inside and outside the plant, and at the site boundaries, during plant operation. To the extent feasible, present supporting data, measurements, approximate noise levels of plant components (e.g., shredders), and methods of analysis.
- Measures proposed to reduce noise levels during plant operation. Include special features of the plant or process design.
- Alternatives to these measures that have been seriously considered, and why rejected.
- All water effluents from the operation of the proposed plant. Include at least the following properties for both before and after pretreatment (and/or treatment) as appropriate: dissolved oxygen, COD, BOD, sludge/solid, refuse/floating solids/oil/grease/scum, color and turbidity, coliform bacteria, taste and odor, pH, temperature, chemical constituents, radioactivity, and flow. To the extent feasible, present supporting data and methods of analysis, include evidence that the applicable water quality regulations are met. Include volumes: average flows and maximum flows.
- Measures proposed to minimize environmental damage resulting from water effluents during plant operations. Include relevant features of the plant or process design.
- Alternatives to these measures that have been seriously considered, and why rejected.
- Known composition and properties of all saleable and nonsaleable products of the proposed process. For fuels this might include particle size, heat value, ash contents, sulfur content, and moisture content, as well as amounts of chlorine, sodium, potassium, and other constituents. Supporting data should be presented where appropriate.
- Estimated impacts of noise, dust (from raw refuse and otherwise), odor, and other atmospheric or aesthetic features inside and outside the proposed plant, on employees and users of the facility, on visitors and passers by, and on nearby residential and recreational areas.
- Other safety problems.
- Provisions proposed to minimize any such negative impacts, and also to safeguard the health and safety of those affected persons.
- Any additional environmental emissions, data, effects, measures, and alternative measures related to or resulting from process design or plant operation.

which they will be involved is sufficient. A description of evaluation team arrangement may also be given, that is, whether teams will be arranged by evaluation criteria, proposal type or other division.

Evaluation Techniques

The RFP should briefly describe the evaluation process which is anticipated, identifying screening procedures and more detailed review stages.

Evaluation Criteria

The criteria to be used in evaluation should be outlined to indicate the project areas which the sponsor considers to be the most important. A detailed version of these criteria provide the sponsor with a basis for outlining the prescribed proposal format.

The criteria may be summarized by category of emphasis, as shown below. This indicates to the bidders which general areas will receive most attention from the sponsor.

Example:

Evaluation Criteria

Proposals will be judged for:

- *Technical soundness, including market commitments*
- *Technical and management qualifications of the bidder and proposed system*
- *Financial qualifications of the bidder and proposed system*
- *Cost, including the net user fee proposed*
- *Environmental impact and aesthetics, including conformance to federal, state and local regulations, and other environmental considerations.*

A more detailed outline of criteria must also be included to encourage the bidder to provide sufficient information in the important areas. It will also show the bidder that the sponsor's goals are well established and thus increase the RFP credibility. Table 13 is an example of how the evaluation criteria may be elaborated.

Table 13
Evaluation Elements

TECHNICAL RELIABILITY OF PROPOSED SYSTEM DESIGN • The overall soundness of the basic program plan and approach to major elements of the facility and integration of unit processes within the facility • The technical feasibility of equipment and unit processes within the proposed system as demonstrated in pilot scale application • The soundness of proposed plans for operations and maintenance • The commitment and dependability of markets for all recovered products • Contingency capabilities of the system • The adaptability of the proposed systems to accommodate technological change and innovation and flexibility to meet differing conditions of operation or resource requirements, including expandibility or contract ability to handle quantitative changes in refuse, change in unit processes, changes in markets or changes in resources requirements
TECHNICAL AND MANAGEMENT QUALIFICATIONS OF THE BIDDERS • The previous performance of the bidder in resource recovery and related subfunctions including marketability, schedules, management and cost controls • Bidder's qualifications in areas of materials handling, storage and transportation • Bidder's qualification in construction, including architecture, engineering design, and site development • Experience and qualification of bidder's management and operating personnel proposed to be assigned during each phase of the project • Compliance of the proposed construction schedule with the sponsor's plan
FINANCIAL QUALIFICATION OF THE BIDDER • Financial soundness associated with the proposed financial plan • Degree of bidder's financial commitment to the system
ENVIRONMENTAL IMPACT AND AESTHETICS • Compliance with air and water quality regulations • Extent of noise and traffic impacts • Quality and quantity of residual materials • Aesthetics of the architectural design and plant site • The extent to which pollution control alternatives have been examined • Energy conservation measures indicated in plant design and operation
ECONOMICS • Proposed basic dumping fee • Responsiveness to cost and pricing requirements as requested in RFP • The reasonableness of costs, including manpower projections, maintenance and operating costs, proposed cost controls and financial reporting and auditing procedures • Cost of operations over the long term under varying operating conditions • The cost of operations over the long term according to the escalator proposed • The resource recovery revenue sharing incentive formula

For some systems it may be possible to have very specific criteria which can be measured quantitatively and which facilitate the evaluation process. It may also indicate to the bidder the exact criteria which the sponsor seeks. However, such specificity limits the sponsor's flexibility in adapting his evaluation to unexpected trends in the proposals which are received.

Appendices

A certain amount of supplemental information may be desirable in the RFP. Such information often may offer more detail than is necessary in the body of the RFP and may be placed in an appendix. Possible appended materials include the items listed below.

- Technical, economic, planning, etc., studies which have already been conducted pertaining to the designated region.
- Site information such as detailed maps, soils and seismic information, test borings, availability of utilities, access conditions.
- Maps of the region showing the processing site(s), disposal locations, transportation routes, transfer stations, refuse generation centers, etc.
- Permit requirements indicating the specific local, state, and federal permits required and the appropriate authority for each.
- Other local, state and federal legal requirements such as environmental standards, zoning laws, building codes, fire and safety codes, professional registration requirements.
- Legislation pertaining to public financing options.
- Sample contract or lease for the facility.
- Letters of intent indicating community interest in regional participation, or market commitments.
- Marketing guidance such as history of market interest, testing programs, names and phone numbers of market contacts, and fuel or material product specifications.

*U.S. GOVERNMENT PRINTING OFFICE:1976 634-930/198 1-3